

An Instance of Sexual Colour-variation in Crustacea.

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Differences in the colour of the two sexes among Crustacea are of very rare occurrence. Darwin in 'The Descent of Man,' chap. ix., refers to this fact and says he is acquainted with but two instances of this peculiarity. One in the case of *Squilla stylifera*, and a second in a species of *Gelasimus*, or fiddler crab, described by Fritz Müller as occurring in Brazil. A third and very striking instance is found in *Callinectes (Neptunus) hastata*, the common edible crab of our southern coast. There are a number of differences in the shape of the two sexes, but besides these they present a marked difference in colour. This colour-variation is confined to the first pair of thoracic appendages, the pair bearing the large chelæ. These appendages are of a yellowish brown on the upper surface, a whitish yellow on the outside, and of a brilliant blue on the inside and particularly at those parts which are protected from the light when the appendage is folded. It would seem therefore that this blue coloration was enhanced by not being exposed to light. The colour of different individuals is tolerably constant and uniform.

Between the colours of the male and female appendages considerable differences are discernible. The most noticeable difference is that the male appendage appears remarkably blue when compared with the female. This is due partly to the fact that the amount of blue surface in the male is much greater than in the female, and partly to the fact that the blue colour is of a much more brilliant hue. The blue colour in the male extends nearly to the tips of the two fingers of the chelæ, both the finger-like process of the propodite and the dactylopodite being largely coloured blue. The very tips are, however, of a brilliant purple. In the female these parts are of an orange hue, with not a trace of blue about them. The tips are also coloured purple, but not so brilliant a purple as is found in the male. In the male the blue colour extends partly upon the outer surface. In the female it is confined to the inner surface and only extends to the base of the dactylopodite. The outer surface of the dactylopodite and of the finger-like process of the propodite are in the male white, while in the female they are reddish orange. Upon the male appendage there is no orange colour as a rule.

These differences in colour are in all cases very marked, and will always serve to distinguish a male from a female appendage. No colour-differences are seen in any part of the crab except upon the first pair of appendages; and it is interesting to note that this sexual difference does not make its appearance till the crab reaches maturity. The chelæ of immature males and females cannot be distinguished from each other. Fritz Müller says that the same is true of the *Gelasimus* observed by him. On the other hand, considering the habits of Crustacea, these sexual differences can hardly be considered as the results of sexual selection.—*Johns Hopkins University Circulars*, Nov. 1883.

* Note from the 'Chesapeake Zoological Laboratory,' 1883.